

AMENDMENTS TO THE CLAIMS

Please amend claim 3, add new claims 13-16, and cancel claims 1 and 12 without prejudice, as shown in the following listing of claims, which will replace all prior versions and listings of claims in the application. Claims 1 and 12 are canceled without prejudice to their pursuit in an appropriate continuation or divisional application. Claims 3 and 13-16 are currently in the application.

Listing of claims:

1. – 2. (canceled)

3 (currently amended). A method of identifying a ligand ~~or its subtypes of FM-3~~ for an orphan receptor protein, comprising the steps of:

~~(i) measuring amount of specific binding between FM-3 and a ligand candidate compound, wherein each ligand candidate compound comprises a peptide having an agonist activity and having a structure of R-X-NH₂ at its C terminus; and~~

~~(ii) selecting from among at least two ligand candidate compounds a compound which has specific binding to FM-3, wherein each ligand candidate compound is obtained by:~~

(a) pre-selecting a ligand candidate, wherein step (a) comprises:

[[a]] (i) measuring comparing a cell stimulating activity of a test compound [[a] when] between a sample wherein the test compound [[a]] is brought in contact with a cell expressing [[FM-3]] an orphan receptor or its cell membrane fractions, and [[when]] a sample wherein the test compound [[a]] is brought in contact with a cell which does not express [[FM-3]] the orphan receptor or its cell membrane fractions;

(ii) selecting the test compound that has an agonist activity at the orphan receptor;

(iii) predicting a common structure that is present in the thus selected test compounds based on homology or similarity among the structures; and

(iv) obtaining a ligand candidate that contains the common structure; and

(b) determining a ligand from among one or more ligand candidates, wherein step (b) comprises:

[[(b)] (i) comparing [[the]] a cell stimulating activities thus measured for each test compound (a) to identify activity of a ligand candidate, which is measured when the ligand candidate is brought in contact with a cell expressing the orphan receptor or its cell membrane fractions, with a cell stimulating activity of a test compound, which is measured when the test compound is brought in contact with a cell expressing the orphan receptor or its cell membrane fractions; and compounds having an agonist activity; and

(c) — determining a common structure of the ligand candidate compounds

(ii) selecting the ligand candidate that has specific binding to the orphan receptor as a ligand of the orphan receptor.

4. – 12. (canceled)

13 (new). The method of claim 3, wherein said ligand is an agonist or an antagonist of the orphan receptor protein.

14 (new). The method of claim 3, wherein said ligand candidate is obtained from a publicly known database.

15 (new). The method of claim 3, wherein said ligand candidate is obtained through an immunoassay using an antibody that specifically recognizes the common structure.

16 (new). The method of claim 3, wherein said ligand candidate is obtained by cloning a primer or a probe which contains a nucleotide sequence encoding the common structure.